

Claims

39. (new) A method of determining degradation of a polymer, the method comprising the steps of:

adding conductive particles to the polymer to form a conductive composite

comprising a preselected weight percent of conductive particles;

making an electrical connection with the conductive composite and measuring a resistivity of the conductive composite; and

equating the resistivity of the conductive composite with the resistivity of a previously-degraded sample of the conductive composite to determine the degradation of the polymer;

wherein a decrease in a resistivity correlates to an age degraded state of the polymer.

40. (new). The method of claim 39 wherein said degraded state of the polymer is a decrease in specific volume with age.

41. 40. (new). The method of claim 39 wherein said degraded state of the polymer is an increase in density of the polymer with age.

42. (new). The method of claim 39 wherein said degraded state of the polymer is a reduction of elongation at break with age.

43. (new). The method of claim 39 wherein said degraded state of the polymer is a loss of volatile fractions with age.

44. (new) The method of claim 39 wherein said equating the resistivity of the conductive composite with the resistivity of a previously-degraded sample of the conductive composite is performed at several temperatures and Arrhenius methodology is used to predict the remaining life of the polymer.